Amendments to the Claims:

1-23. (Cancelled)

24. (New) A computer-implemented method of production scheduling, comprising:

loading a plurality of work orders from a database, each work order containing a plurality of work cards to define a plurality of tasks associated with the work order;

comparing the plurality of work cards for each work order to a work card template, including the steps of,

(a) extracting the plurality of work cards from a work order,

(b) comparing work card identification numbers from the plurality of work cards from the work order to work card identification numbers from a plurality of work cards from the work card template,

(c) if a work card identification number from one of the plurality of work cards from the work order matches a work card identification number from one of the plurality of work cards from the work card template, then copying production parameters for a job associated with the one of the plurality of work cards from the work card template to the one of the plurality of work cards from the work order, the production parameters including at least a work card number, description of the job, sequence of the job, temporal data related to the job, status of the job, priority of the job, milestones for the job, execution phase of the job, and man-hours needed to perform the job,

(d) for each matching work card, determining dependency to other work cards from the work order, the dependencies including at least start-to-start dependency, start-to-finish dependency, finish-to-start dependency, and finish-to-finish dependency,

(e) for each dependency found in step (d), linking the work cards found to be dependent,

(f) comparing zone location of a work piece associated with the job on the work card from the work order with zone location of a work piece associated with the job on the work card from the work card template and, if found to differ, changing zone location on the work card from the work order to match zone location on the work card from the work card template, and

(g) comparing skill of worker needed for the job on the work card from the work order with skill of worker needed for the job on the work card from the work card template and, if found to differ, changing skill of worker on the work card from the work order to match skill of worker on the work card from the work card template;

adding work cards found in the work card template but not found in the plurality of work cards from the work order to the plurality of work cards to the work order, including the steps of,

(h) querying the database for non-routine work cards associated with the work order,

(i) computing time for each non-routine work card associated with the work order,

(j) inserting each non-routine work card into the plurality of work cards for the work order,

(k) optimizing scheduling of the work order with the non-routine work cards inserted into the plurality of work cards in terms of demand and availability of resources, and

(l) setting a baseline schedule of the work order according to the optimized schedule from step (k);

displaying the work order with table format with each row representing one of the plurality of work cards from the work order, the display including a plurality of boxes for selecting a work order, importing a work order, updating work cards within the work order, displaying non-routine work cards, modifying work cards within the work order, suspending work cards within the work order, viewing unscheduled work cards with the work order, and switching the display to graphical format;

performing the plurality of tasks on the plurality of work cards from the work order;

updating the database upon completion of each of the plurality of tasks on the plurality of work cards from the work order, including the steps of,

(m) updating non-routine work cards, and

(n) if the work card is suspended, then suspending work cards dependent upon the suspended work card;

updating the display to remove completed and suspended work cards;

performing what-if scenarios of the production schedule by revising the production parameters for the plurality of work cards from the work order, including the steps of,

(o) selecting a production parameter to revise,

(p) selecting a time slot in the production schedule,

(q) determining resources needed to meet revised production parameters,

(r) comparing resources needed to meet revised production parameters with available resources,

(s) repeating steps (p) through (r) for each time slot in the production schedule,

(t) repeating steps (o) through (s) for each production parameter to be considered,

(u) recording each what-if scenario in the database, and

(v) determining an optimal production schedule by finding which what-if scenario provides maximum usage of the available resources; and

scheduling the work order according to the optimal production schedule, including the steps of,

(w) determining start date of the work order by calculating earliest start and completion dates and latest start and completion dates for each of the plurality of work cards from the work order, and

(x) determining end date of the work order by calculating elapsed time for each of the plurality of work cards from the work order, including a critical path for a longest time through the plurality of work cards from the work order.

25. (New) The computer-implemented method of claim 24, further including the step of providing a graphical user interface (GUI) to the production scheduling process for a user.

26. (New) A computer system for executing a production schedule, comprising:

means for loading a plurality of work orders from a database, each work order containing a plurality of work cards to define a plurality of tasks associated with the work order;

means for comparing the plurality of work cards for each work order to a work card template, including,

(a) extracting the plurality of work cards from a work order,

(b) comparing work card identification numbers from the plurality of work cards from the work order to work card identification numbers from a plurality of work cards from the work card template,

(c) if a work card identification number from one of the plurality of work cards from the work order matches a work card identification number from one of the plurality of work cards from the work card template, then copying production parameters for a job associated with the one of the plurality of work cards from the work card template to the one of the plurality of work cards from the work order, the production parameters including at least a work card number, description of the job, sequence of the job, temporal data related to the job, status of the job, priority of the job, milestones for the job, execution phase of the job, and man-hours needed to perform the job,

(d) for each matching work card, determining dependency to other work cards from the work order, the dependencies including at least start-to-start dependency, start-to-finish dependency, finish-to-start dependency, and finish-to-finish dependency,

(e) for each dependency found in step (d), linking the work cards found to be dependent,

(f) comparing zone location of a work piece associated with the job on the work card from the work order with zone location of a work piece associated with the job on the work card from the work card template and, if found to differ, changing zone location on the work card from the work order to match zone location on the work card from the work card template, and

(g) comparing skill of worker needed for the job on the work card from the work order with skill of worker needed for the job on the work card from the work card template and, if found to differ, changing skill of worker on the work card from the work order to match skill of worker on the work card from the work card template;

means for adding work cards found in the work card template but not found in the plurality of work cards from the work order to the plurality of work cards to the work order, including the steps of,

(h) querying the database for non-routine work cards associated with the work order,

(i) computing time for each non-routine work card associated with the work order,

(j) inserting each non-routine work card into the plurality of work cards for the work order,

(k) optimizing scheduling of the work order with the non-routine work cards inserted into the plurality of work cards in terms of demand and availability of resources, and

(l) setting a baseline schedule of the work order according to the optimized schedule from step (k);

means for displaying the work order with table format with each row representing one of the plurality of work cards from

the work order, the display including a plurality of boxes for selecting a work order, importing a work order, updating work cards within the work order, displaying non-routine work cards, modifying work cards within the work order, suspending work cards within the work order, viewing unscheduled work cards with the work order, and switching the display to graphical format;

means for performing the plurality of tasks on the plurality of work cards from the work order;

means for updating the database upon completion of each of the plurality of tasks on the plurality of work cards from the work order, including the steps of,

(m) updating non-routine work cards, and

(n) if the work card is suspended, then suspending work cards dependent upon the suspended work card;

means for updating the display to remove completed and suspended work cards;

means for performing what-if scenarios of the production schedule by revising the production parameters for the plurality of work cards from the work order, including the steps of,

(o) selecting a production parameter to revise,

(p) selecting a time slot in the production schedule,

(q) determining resources needed to meet revised production parameters,

(r) comparing resources needed to meet revised production parameters with available resources,

(s) repeating steps (p) through (r) for each time slot in the production schedule,

(t) repeating steps (o) through (s) for each production parameter to be considered,

(u) recording each what-if scenario in the database, and

(v) determining an optimal production schedule by finding which what-if scenario provides maximum usage of the available resources; and

means for scheduling the work order according to the optimal production schedule, including the steps of,

(w) determining start date of the work order by calculating earliest start and completion dates and latest start and completion dates for each of the plurality of work cards from the work order, and

(x) determining end date of the work order by calculating elapsed time for each of the plurality of work cards from the work order, including a critical path for a longest time through the plurality of work cards from the work order.

27. (New) The computer system of claim 26, further including means for providing a graphical user interface (GUI) to the production scheduling process for a user.

28. (New) A computer program product usable with a programmable computer processor having a computer readable program code embodied therein, comprising:

computer readable program code which loads a plurality of work orders from a database, each work order containing a plurality of work cards to define a plurality of tasks associated with the work order;

computer readable program code which compares the plurality of work cards for each work order to a work card template, including the steps of,

(a) extracting the plurality of work cards from a work order,

(b) comparing work card identification numbers from the plurality of work cards from the work order to work card identification numbers from a plurality of work cards from the work card template,

(c) if a work card identification number from one of the plurality of work cards from the work order matches a work card identification number from one of the plurality of work cards from the work card template, then copying production parameters for a job associated with the one of the plurality of work cards from the work card template to the one of the plurality of work cards from the work order, the production parameters including at least a work card number, description of the job, sequence of the job, temporal data related to the job, status of the job, priority of the job, milestones for the job, execution phase of the job, and man-hours needed to perform the job,

(d) for each matching work card, determining dependency to other work cards from the work order, the dependencies including at least start-to-start dependency, start-to-finish dependency, finish-to-start dependency, and finish-to-finish dependency,

(e) for each dependency found in step (d), linking the work cards found to be dependent,

(f) comparing zone location of a work piece associated with the job on the work card from the work order with zone location of a work piece associated with the job on the work card from the work card template and, if found to differ, changing zone location on the work card from the work

order to match zone location on the work card from the work card template, and

(g) comparing skill of worker needed for the job on the work card from the work order with skill of worker needed for the job on the work card from the work card template and, if found to differ, changing skill of worker on the work card from the work order to match skill of worker on the work card from the work card template;

computer readable program code which adds work cards found in the work card template but not found in the plurality of work cards from the work order to the plurality of work cards to the work order, including the steps of,

(h) querying the database for non-routine work cards associated with the work order,

(i) computing time for each non-routine work card associated with the work order,

(j) inserting each non-routine work card into the plurality of work cards for the work order,

(k) optimizing scheduling of the work order with the non-routine work cards inserted into the plurality of work cards in terms of demand and availability of resources, and

(l) setting a baseline schedule of the work order according to the optimized schedule from step (k);

computer readable program code which displays the work order with table format with each row representing one of the plurality of work cards from the work order, the display including a plurality of boxes for selecting a work order, importing a work order, updating work cards within the work order, displaying non-routine work cards, modifying work cards within the work order, suspending work cards within the work

order, viewing unscheduled work cards with the work order, and switching the display to graphical format;

computer readable program code which performs the plurality of tasks on the plurality of work cards from the work order;

computer readable program code which updates the database upon completion of each of the plurality of tasks on the plurality of work cards from the work order, including the steps of,

(m) updating non-routine work cards, and

(n) if the work card is suspended, then suspending work cards dependent upon the suspended work card;

computer readable program code which updates the display to remove completed and suspended work cards;

computer readable program code which performs what-if scenarios of the production schedule by revising the production parameters for the plurality of work cards from the work order, including the steps of,

(o) selecting a production parameter to revise,

(p) selecting a time slot in the production schedule,

(q) determining resources needed to meet revised production parameters,

(r) comparing resources needed to meet revised production parameters with available resources,

(s) repeating steps (p) through (r) for each time slot in the production schedule,

(t) repeating steps (o) through (s) for each production parameter to be considered,

(u) recording each what-if scenario in the database, and

(v) determining an optimal production schedule by finding which what-if scenario provides maximum usage of the available resources; and

computer readable program code which schedules the work order according to the optimal production schedule, including the steps of,

(w) determining start date of the work order by calculating earliest start and completion dates and latest start and completion dates for each of the plurality of work cards from the work order, and

(x) determining end date of the work order by calculating elapsed time for each of the plurality of work cards from the work order, including a critical path for a longest time through the plurality of work cards from the work order.

29. The computer program product of claim 28, further including the step of providing a graphical user interface (GUI) to the production scheduling process for a user.